Adams 12 Five Star Schools has a simple design philosophy: Kids first! "Schools are for kids, so that's our main focus," said David Besel, AIA, PE, Facilities Planning & Design Manager for the district. "We work to design schools that support the physical needs of how kids learn with all their senses. Each new school should bring us one step closer to an optimal learning environment."

The district is in the midst of a multi-year process of building five new schools and renovating many others with funding from a $180 million bond approved in 2000. **Elementary 30** is scheduled to open in August 2004. It is expected to be the highest performing elementary school in the district, yet will be built for costs typical of Front Range schools.

Kids First at Adams 12 Elementary 30

Elementary 30's design takes advantage of year-round daylighting by placing ample windows on the north face of the school.

Daylighting

"Research performed in Colorado and elsewhere indicates daylighting improves student performance, so quality daylighting is a high priority for the district's new schools," said Besel.

Most districts have technical specifications and educational specifications to ensure that minimum acceptable standards are met. Adams 12 builds on these by adding High Performance Design Guidelines to communicate goals that go beyond the norm.

Does High Performance Cost More?

"Our philosophy is to pay a little more for design and commissioning, then pay less for construction and utility bills," said Besel.

The district pays an additional 1% of the construction costs for better design and an additional 1% for commissioning to ensure that everything will be thoroughly tested and operational before the building is turned over.

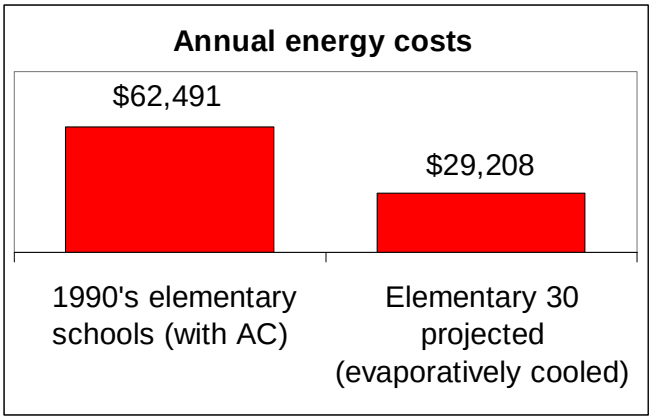
The construction budget was $99 per square foot, which is typical for the Front Range. While daylighting, acoustics and efficiency features increase cost, right-sizing the mechanical, electrical and lighting systems reduces costs.

"We focus on what's best for kids, and the result is a design that fits our budget and yields lower operating costs for decades to come."

- David Besel

Daylight modeling helps designers meet the district's goal of daylighting for 75% of the classrooms.

Rebuild COLORADO



ADAMS 12 HIGH PERFORMANCE DESIGN GUIDELINES

For classrooms:

- Comply with modified Acoustical Guidelines
- Provide daylighting as primary lighting for at least 75% of the classrooms
- Limit installed lighting to maximum of 1.0 watt per square foot (sf)
- Integrate electric lighting with daylighting for a maximum of 0.5 watts per sf in daytime

Overall:

- Limit average annual energy consumption to 60 kBtu per sf per year
- Use DOE-2 energy modeling software from schematic design through construction document review.
- Use commissioning to ensure all systems and components operate the way they were designed.
- Use life cycle cost analysis to inform decisions.
- Use daylighting guidelines from the Collaborative for High Performance Schools' *Best Practices Manual - 2002 Edition* (at www.chps.net)

Contact us!

The Rebuild Colorado program of the Governor's Office of Energy Management offers services and resources to school districts and other state and local governments.

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www.colorado.gov/rebuildco

Low utility bills ...ever after

"Though we don't put energy performance ahead of student performance, we find that what we do to help kids learn results in a very efficient building," says Besel. Since the school will be in use at least 50 years, the comfort and estimated $33,000 annual savings will be assets to the district for decades to come.

One contributor to the school's efficiency is the indirect/direct evaporative cooling system. "Just like many technologies, evaporative cooling has improved dramatically in recent years. Better materials and controls ensure indoor air quality and student comfort at a fraction of the energy cost of traditional cooling systems," said Jack Dempsey, Energy Manager for the district.

PROJECT DETAILS

Facility: Adams 12 Five Star Schools, Elementary 30

Facility Size: 637 to 712 students, 67,925 square feet

Facility Location: Broomfield, Colorado

Project Budget: $6.7 million or $99 per square foot

Annual Energy Cost (projected): $29,208 in gas and electricity costs, or $0.43 per sf (compared to $0.92 per sf for 1990s air conditioned elementary schools)

Annual Energy Use (projected): Gas and electricity total 53 kBtu per sf (compared to 110 kBtu for 1990's air conditioned elementary schools, and 88 kBtu for the district average elementary school)

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